Space Weather Forecast

Issued on Monday, 05 December 2022 at 01:19 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Daily Chance of Moderate flares. Chance of G1/Minor Storms Day 3 (7 Dec).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was Low with occasional minor Common-class flares recorded. There are currently six regions on the visible disc. One large sunspot region in the southeast remains stable and mature. The main developmental regions were two sunspot regions both in the north central disk.

No Earth-directed CMEs (coronal mass ejections) were observed in available imagery during the last 24 hours.

Solar Wind / Geomagnetic Activity: Generally Elevated solar wind speeds around 510-530km/s much of the period. The total magnetic field and important north-south component were generally weak but with a brief Moderate period through the middle of the day potentially signalling transitory CME (coronal mass ejection) effects. Resultant geomagnetic activity was Quiet to Active(Kp 1-4).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at Background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low activity is expected to continue, with occasional Common-class flares expected, and a daily chance of isolated Moderate flares.

Solar Wind / Geomagnetic Activity: Solar winds are expected to decrease towards Background as the effects of a stream of fast winds from a coronal hole and a weak CME (coronal mass ejections) wane. The next period of coronal hole sourced fast winds is expected to arrive on into Day 3 (7th) with peak winds of 500-600 km/s signalled. Easing, mainly Quiet to Unsettled geomagnetic activity expected through Days 1-2 (5th, 6th). Activity increasing to Unsettled to Active with a chance of G1/Minor storm intervals into Day 3 (7th).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at Background levels with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	10	30	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	30	30	30	30
Very Active	R3 to R5 X	No	1	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	2	3	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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